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Project Document No. 31

SURVEYOR PROJECT OBJECTIVES AND FLIGHT OBJECTIVES FOR MISSIONS A THROUGH D

PD-31

March 15, 1965

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FOREWORD

This document is for the information and guidance of those associated with the Surveyor Project only. It is not to be released to the press, public, or individuals not associated with the Surveyor Project unless authorized by the Surveyor Project Manager.

I. PURPOSE AND SCOPE

The purpose of this document is to define the Surveyor Project objectives and the flight objectives for Missions A through D. This document provides the criteria for conducting and determining the success of these missions.

A subsidiary document, "Surveyor Mission A, Flight Test Objectives", defines all of the significant performance requirements which must be properly demonstrated during flight test operations to determine accomplishment of the flight objectives for Missions B through D are being prepared.

The scope of this document is limited to Surveyor Missions A through D except as it describes the Surveyor Project objectives below.

II. SURVEYOR PROJECT OBJECTIVES

The Surveyor Project objectives are:

1. To accomplish successful soft landings on the Moon as demonstrated by operations of the spacecraft subsequent to landing.
2. To perform operations on the lunar surface which will contribute new scientific knowledge about the Moon and provide basic data in support of Apollo.

III. FLIGHT OBJECTIVES, MISSIONS A THROUGH D

Missions A through D, commonly called the engineering test flights, are intended to satisfy the first of the Project objectives. The flight objectives of each of Missions A through D, as given here, have evolved from a logic of progressive achievement which should reasonably be expected in this block of four flights. These flight objectives will be used in the planning of Missions A to D; it is intended, however, to review this document after each flight in order to evaluate the suitability of the objectives for subsequent missions.

A. MISSION A FLIGHT OBJECTIVES

1. Primary

Demonstrate sucessful operation of the launch vehicle, spacecraft, spaceflight operations, DSIF, and ground communications from launch through completion of the midcourse maneuver.

2. Secondary

Demonstrate successful spacecraft operation from the completion of the midcourse maneuver through landing.

3. Tertiary

Perform post-landing functions.

B. MISSION B FLIGHT OBJECTIVES

1. Primary

Demonstrate successful operation of the launch vehicle spacecraft, spaceflight operations, DSIF, and ground communications from launch through landing.

2. Secondary

Perform post landing functions.

3. Tertiary

Obtain descent TV.

In the event that Mission A flight objectives are not achieved, the flight objectives of Mission B shall become the same as those of Mission A.

C. FLIGHT OBJECTIVES OF MISSIONS C AND D

The Objective of Missions C and D is to demonstrate successful operation of the launch vehicle, spacecraft, spaceflight operations, DSIF, and ground communications from launch through landing and post-landing phases, to obtain descent TV, and to perform a postlanding TV survey.

In the event the Mission B flight objectives are not achieved, those for Mission C shall become the same as those of B, independent of whether the flight objectives of Mission A have, or have not, been achieved. The flight objectives of Mission D will remain the same, independent of prior flight results.

Allocation of manpower, resources, funds, and effort will reflect the priorities implicit in the ordered flight objectives. It is intended that all flight objectives for each flight be achieved.

IV. DEFINITION OF PRIMARY, SECONDARY, AND TERTIARY OBJECTIVES

A. PRIMARY

Achievement of the primary objective is required for the mission to be considered sucessful. When developmental or operational conditions exist which jeopardize or prevent achievement of the primary objective, the launch will be delayed, or rescheduled. Further, nonstandard procedures, if required, will be executed during flight operations in such a manner as to accomplish the primary objective at the expense of the lesser objectives.

B. SECONDARY

Achievement of the secondary objective is highly desirable; however, the failure to achieve the secondary objective, while a serious matter, is not regarded as mission failure. The scheduled launch would probably be delayed, or rescheduled if conditions exist which seriously jeopardize or prevent achievement of the secondary objective, but a decision would be made at that time based on the circumstances.

C. TERTIARY

Achievement of the tertiary objective is considered a bonus. If developmental or launch, transit, and lunar (e.g., lighting) readiness conditions which affect the accomplishment of the tertiary objectives are not satisfactory, the scheduled launch will proceed as planned without major delays.

DATE: April 14, 1965

TO: Distribution

FROM: V. C. Clarke Jr.

SUBJECT: Errata to Surveyor Project Objectives and Flight Objectives for Missions A through D, PD-31

The second paragraph appearing on Page 1 of the subject document should read:

> A subsidiary document, "Surveyor Mission A, Flight Test Objectives," PD-32, defines all of the significant performance requirements which must be properly demonstrated during the flight test operations to determine accomplishment of the flight objectives for Mission A. Companion documents defining the detailed flight test objectives for Missions B through D are being prepared.

V. C. Clarke, Jr.

V. C. Clarke, Jr., Manager Surveyor
Mission Analysis and Engineering

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